

Docket No.: 064026-0015

PATENT



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Customer Number: 20277
Andrey Y. SHARUDENKO, et al. : Confirmation Number: 7964
Application No.: 10/548,406 : Group Art Unit: 3682
Filed: September 08, 2005 : Examiner: Not yet assigned

For: A ROTARY MACHINE (EMBODIMENTS) DRIVING MEMBER FOR A ROTARY MACHINE AND AN ENGINE PLANT USING THE SAME

REQUEST FOR CORRECTED FILING RECEIPT


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Commissioner for Patents
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Alexandria, VA 22313-1450

Sir:

Attached is a copy of the Filing Receipt received from the U.S. Patent and Trademark Office in the above-referenced application. It is noted that the number of pages of drawings number of total claims are incorrect. Attached are copies of the formal drawings and amended claims, which evidence that **the number of pages of formal drawings should be twenty-seven (27), and the number of total claims should be thirty (30)**. It is requested that a corrected filing receipt be issued.

Respectfully submitted,

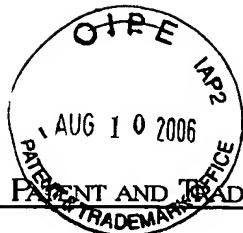
McDERMOTT WILL & EMERY LLP


Alexander V. Yampolsky
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Date: August 10, 2006

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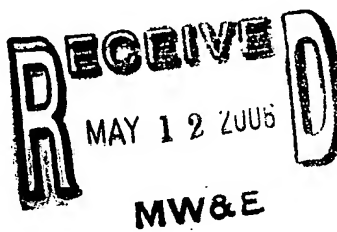
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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/548,406	09/08/2005	3682	1005	064026-0015	22 (27)	33 (30)	3

CONFIRMATION NO. 7964

20277
MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096



FILING RECEIPT



OC000000018690791

Date Mailed: 05/08/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Andrey Y. Sharudenko, Moscow, RUSSIAN FEDERATION;
Olga M. Sharudenko, Moscow, RUSSIAN FEDERATION;

Power of Attorney: The patent practitioners associated with Customer Number 20277.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/RU03/00463 10/31/2003

Foreign Applications

Acceptable Request to Retrieve Priority Application Received?

RUSSIAN FEDERATION 2003127441 09/10/2003

NO

If Required, Foreign Filing License Granted: 05/04/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/548,406**

Projected Publication Date: 08/10/2006

Non-Publication Request: No

Early Publication Request: No

Title

Rotary machine (variants), a working member therefor and an propulsion device using said rotary machine

Preliminary Class

074

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For: A ROTARY MACHINE (EMBODIMENTS) DRIVING MEMBER FOR A ROTARY MACHINE AND AN ENGINE PLANT USING THE SAME		

PRELIMINARY AMENDMENT

Mail Stop New Application
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Sir:

Prior to examination, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims begin on page 3 of this paper.

Remarks/Arguments begin on page 9 of this paper.

Not yet assigned

IN THE SPECIFICATION:

Please insert the following new paragraph after the Title and before the first paragraph on page 1:

-- This application is the U.S. National Phase under 35 U.S.C. § 371 of International Application No. PCT/RU2003/000463, filed October 31, 2003, which in turn claims the benefit of Russian Application No. RU 2003127441, filed September 10, 2003, the disclosures of which Applications are incorporated by reference herein in their entirety. --

IN THE CLAIMS

A listing of the claims presented in this patent application appears below. This listing replaces all prior versions and listing of claims in this patent application.

1. (Original) A rotary machine comprising a housing and a rotor received therein, characterized in that the inner surface of the housing is shaped by two intersecting cylinder parts having different diameters and parallel axes; the rotor received in the housing is coaxial with the smaller-diameter cylinder and has at least two segmental rotor parts mounting annular rotor covers and at least two pairs of annular elements connected in pairs and adapted to turn relative to the segmental rotor parts; the machine further comprises pivotal elements accommodated between the annular elements of each pair; a driving member, whose axis of rotation is coincident with the axis of the larger-diameter cylinder and which is received in the openings of the pivotal elements for movement therein to bring its working surfaces, during rotation thereof, into contact with the inner working surfaces of the segmental rotor parts, rotor covers, and the inner end-face and cylindrical surfaces of the housing in order to define inner variable-volume working chambers between the segmental rotor parts and the driving member, and outer variable-volume working chambers between the driving member, the inner surfaces of the housing, and the outer surfaces of the rotor.

2. (Original) A rotary machine as claimed in claim 1, characterized in that the pairs of annular elements are designed to move over, and engage, inner annular guides of the segmental rotor parts.

3. (Original) A rotary machine as claimed in claim 1, characterized in that the pairs of annular elements embrace the segmental rotor parts and are in contact with the inner cylindrical

Not yet assigned

surface of the smaller-diameter housing part for movement in, and engagement with, the annular guides of the segmental rotor parts.

4. (Original) A rotary machine as claimed in claim 1, characterized in that the pairs of annular elements embrace the segmental rotor parts and are in contact with the inner cylindrical surface of the smaller-diameter housing part for movement in annular guides of one another and engagement with the segmental rotor parts.

5. (Original) A rotary machine as claimed in claim 3 or 4, characterized in that the pairs of annular elements embrace one another on two sides during movement relative to one another.

6. (Original) A rotary machine as claimed in any of claims 2, 3 or 4, characterized in that the pairs of annular elements are adapted to move in annular guides of the rotor covers.

7. (Original) A rotary machine as claimed in claim 1, characterized in that the annular guides of the segmental rotor parts and rotor covers and the end-face surfaces of the housing are provided with rolling-contact bearings.

8. (Original) A rotary machine as claimed in claim 1, characterized in that the inner cylindrical surface of the smaller-diameter housing part is rippled to increase resistance to the flow of escaping gases.

9. (Original) A rotary machine as claimed in claim 1, characterized in that the openings of the pivotal elements have a shape complementary to the shape of the driving member and are adapted to slide therein.

10. (Original) A rotary machine as claimed in claim 1, characterized in that the end-face parts of the pivotal elements are provided at connecting points of the annular elements in rolling-contact bearings.

11. (Original) A rotary machine as claimed in claim 1, characterized in that the openings of the pivotal elements accommodate rolling-contact bearings for engaging the driving member.

12. (Original) A rotary machine as claimed in claim 1, characterized in that the annular elements have reinforcing and cooling plates, and the housing is provided with coolant passages.

13. (Original) A rotary machine as claimed in claim 1, characterized in that the driving member comprises a single plate or a plurality of interconnected plates and has a two-, three- or multi-lobed cross-section so that the lobes are received in the pivotal elements, the angles between the lobes are equal, and each segmental rotor part has a flat or two-sided surface, the angle between the lobes being equal to that between the sides to ensure contact between the driving member and the segmental rotor parts during rotation thereof.

14. (Original) A rotary machine as claimed in claim 13, characterized in that the driving member has parallel side faces and rounded short sides interacting with the inner cylindrical surface of the larger-diameter housing part.

15. (Original) A rotary machine as claimed in claim 14, characterized in that the rounded short sides of the driving member have a radius of curvature larger than the distance from the center of rotation of the rotor to the pivotal elements.

16. (Original) A rotary machine comprising a housing and a rotor received therein, characterized in that the inner surface of the housing is shaped by two intersecting cylinder parts

of different diameters having parallel axes; the rotor received in the housing is coaxial to the smaller-diameter housing cylinder part and comprises at least two pairs of elements interconnected in pairs and having annular guides; each pair of elements comprises a segmental element and an annular element and is adapted to move in the annular guides of the other pair; the machine comprises pivotal elements interposed between the elements of each pair; a driving member having an axis of rotation coincident with the axis of the larger-diameter housing cylinder part and accommodated in the openings of the pivotal elements for movement therein, and having its working surfaces in contact with the inner working surfaces of the segmental rotor elements and with the inner end faces and the cylindrical surface of the housing to define inner variable-volume working chambers between the inner surfaces of the annular elements and the driving member and outer variable-volume working chambers between the driving member, the outer surfaces of the rotor, and the inner surfaces of the housing.

17. (Original) A rotary machine as claimed in claim 16, characterized in that pairs of annular elements are further adapted to move in the annular guides of the rotor covers.

18. (Original) A rotary machine as claimed in claim 16, characterized in that the inner cylindrical surface of the smaller-diameter housing cylinder part is rippled to increase resistance to the passage of escaping gases.

19. (Original) A rotary machine as claimed in claim 16, characterized in that the annular guides of the annular elements and segmental elements, and the end-face surfaces of the housing have rolling-contact bearings.

20. (Original) A rotary machine as claimed in claim 16, characterized in that the openings of the pivotal elements have a shape complementary to that of the driving member for the driving member to slide therein.

21. (Original) A rotary machine as claimed in claim 16, characterized in that the end-face parts of the pivotal elements are provided at the connecting points of annular and segmental elements in rolling-contact bearings.

22. (Original) A rotary machine as claimed in claim 16, characterized in that the openings of the pivotal elements accommodate rolling-contact bearings for interacting with the driving member.

23. (Currently Amended) A rotary machine as claimed in claim 16 ~~any of claims 16 to 22~~, characterized in that the annular and segmental elements have reinforcing and cooling plates and the housing has coolant passages.

24. (Original) A rotary machine as claimed in claim 16, characterized in that the driving member comprises a single plate or a plurality of interconnected plates that have a two-, three- or multi-lobed cross-section so that the lobes are received in the pivotal elements, the angles between the lobes are equal, and each segmental rotor part has a flat or two-sided surface, the angle between the lobes being equal to the angle between the sides to maintain contact between the driving member and the segmental rotor parts during rotation thereof.

25. (Original) A rotary machine as claimed in claim 16, characterized in that the driving member has parallel longitudinal sides and rounded short sides interacting with the inner cylindrical surface of the larger-diameter housing part.

26. (Original) A rotary machine as claimed in claim 16, characterized in that the rounded parts of the short sides of the driving member have a radius of curvature larger than the distance from the center of rotation of the rotor to the pivotal elements.

27. (Original) A driving member of a rotary machine, comprising a casing, wherein each part thereof between the axis of rotation of the rotor and each of the working surfaces designed to be in contact with the inner cylindrical surface of the housing is provided with communicating inner chambers, one of which is a combustion working chamber and the other chamber is designed to be filled with a working fluid for subsequently purging the working chamber so that a fuel mixture can be injected into it and the combustion products are discharged into the main working chamber of the rotary machine.

28. (Original) A driving member as claimed in claim 27, characterized in that it has passages and valves provided therein for transferring the working fluid to the working chambers following compression thereof.

29. (Original) A driving member as claimed in claim 27, characterized in that it is provided with outlet ports in the shape of nozzles.

30. (Currently Amended) A driving member as claimed in claim 27 ~~25~~, characterized in that each of the combustion working chambers has double walls.

Claim 31 (cancelled)

Not yet assigned

REMARKS

The specification is amended to perfect the continuity information.

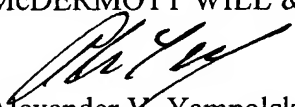
The claims have been amended to correct dependency and cancel claim 31, which is improper for US patent practice.

No new matter has been introduced. Entry of this amendment is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

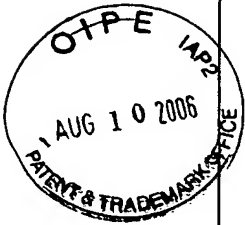
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Alexander W. Yampolsky
Registration No. 36,324

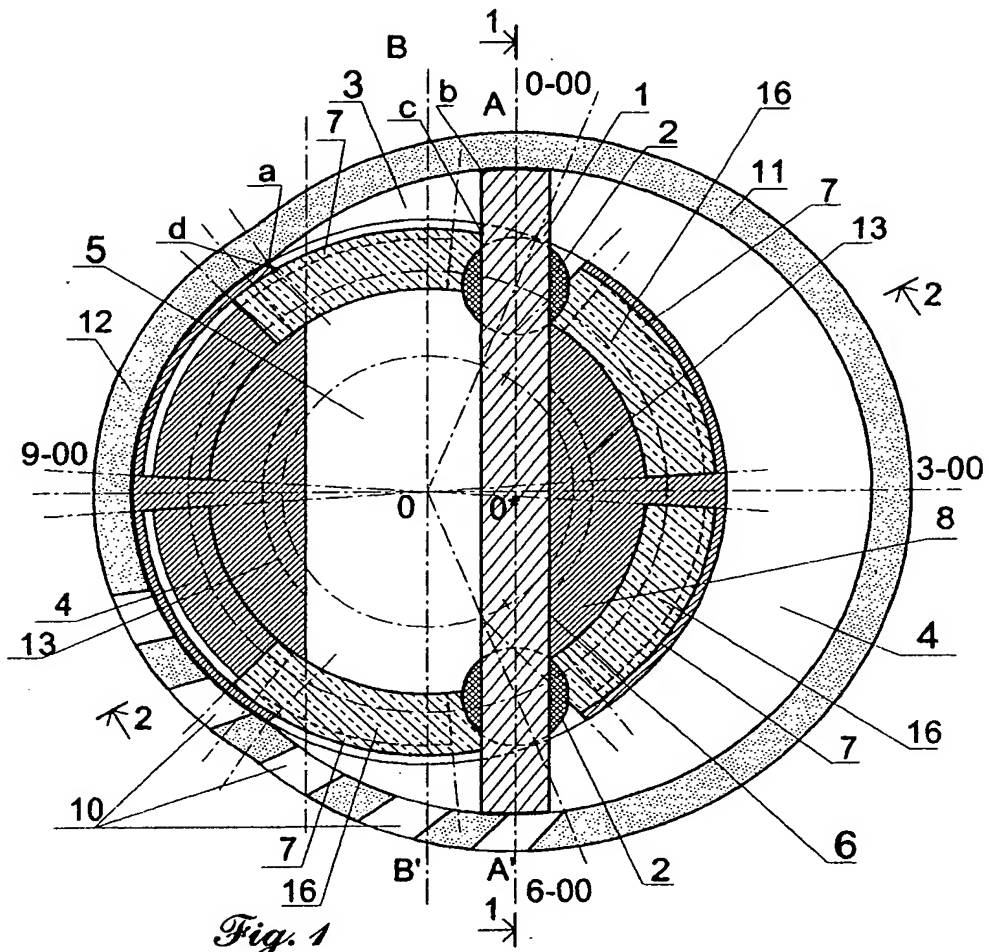
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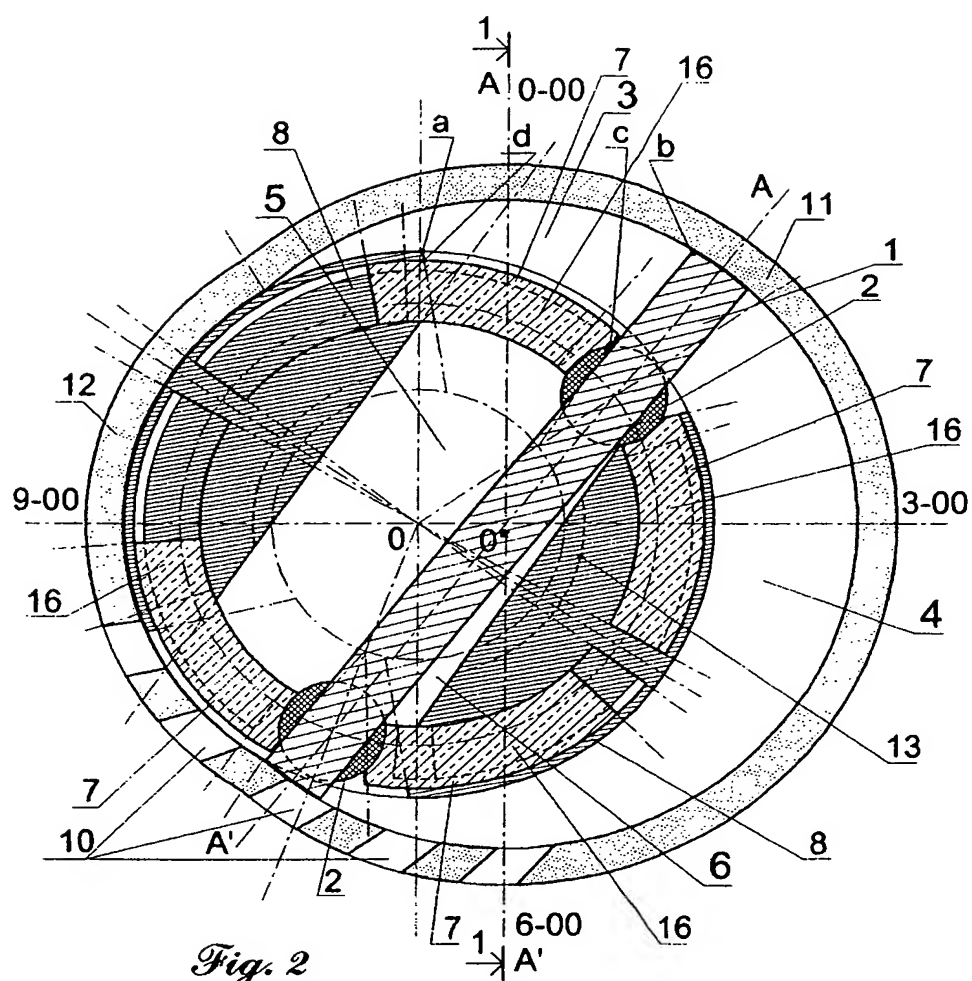
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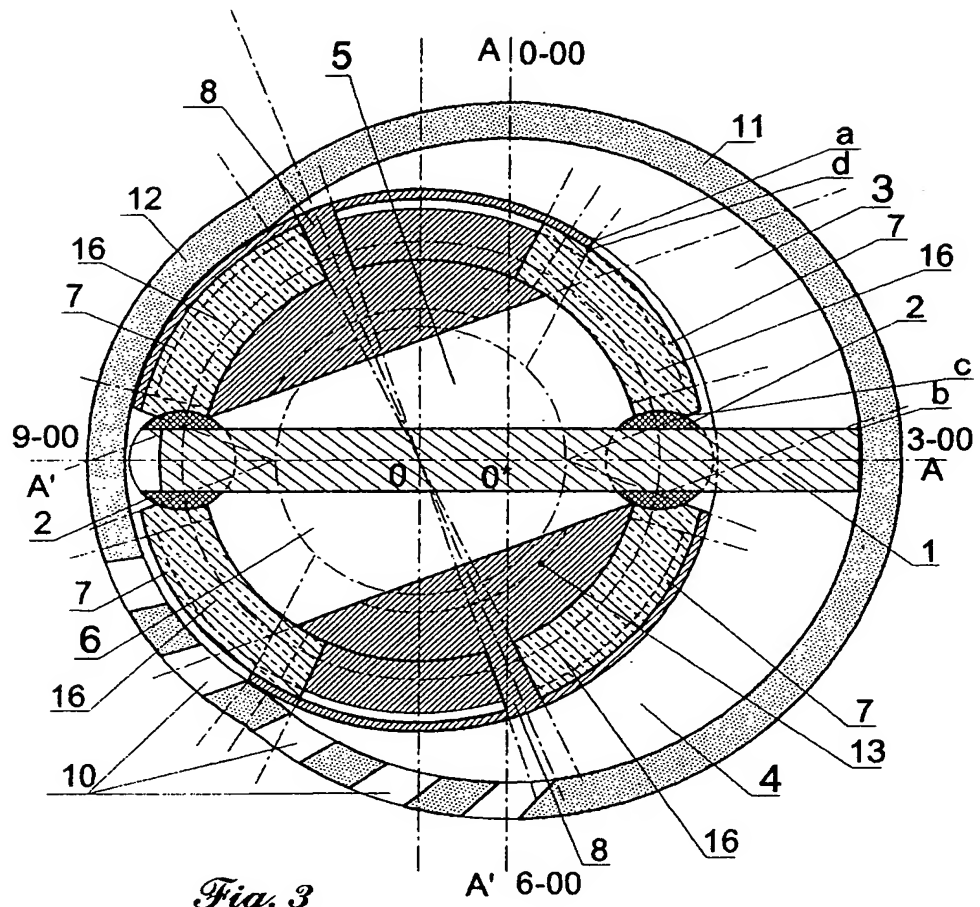


Fig. 3

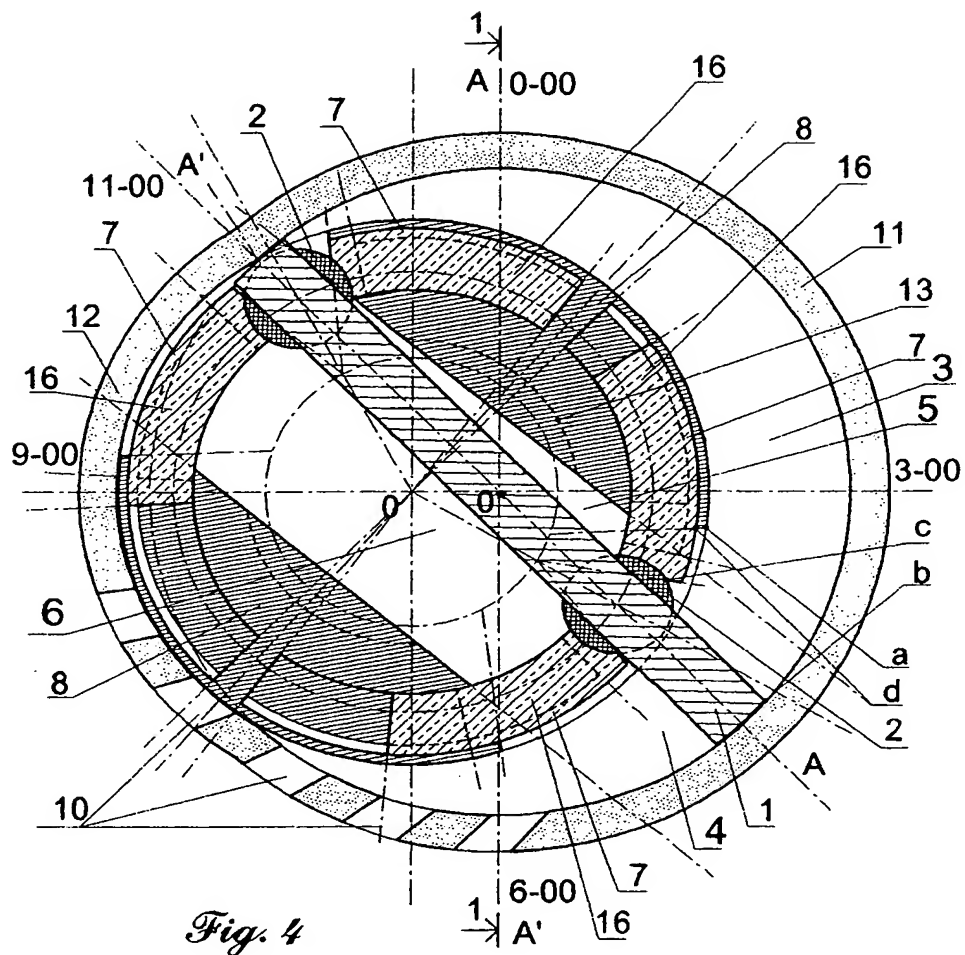
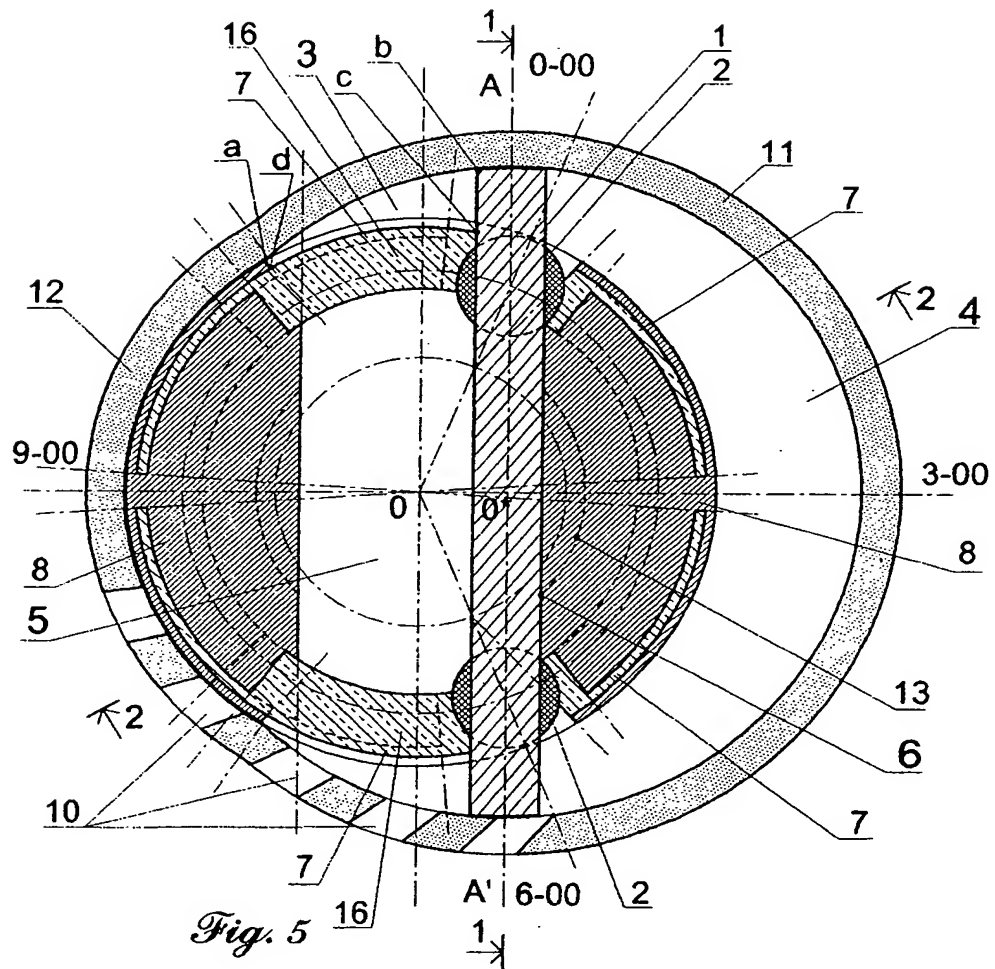


Fig. 4

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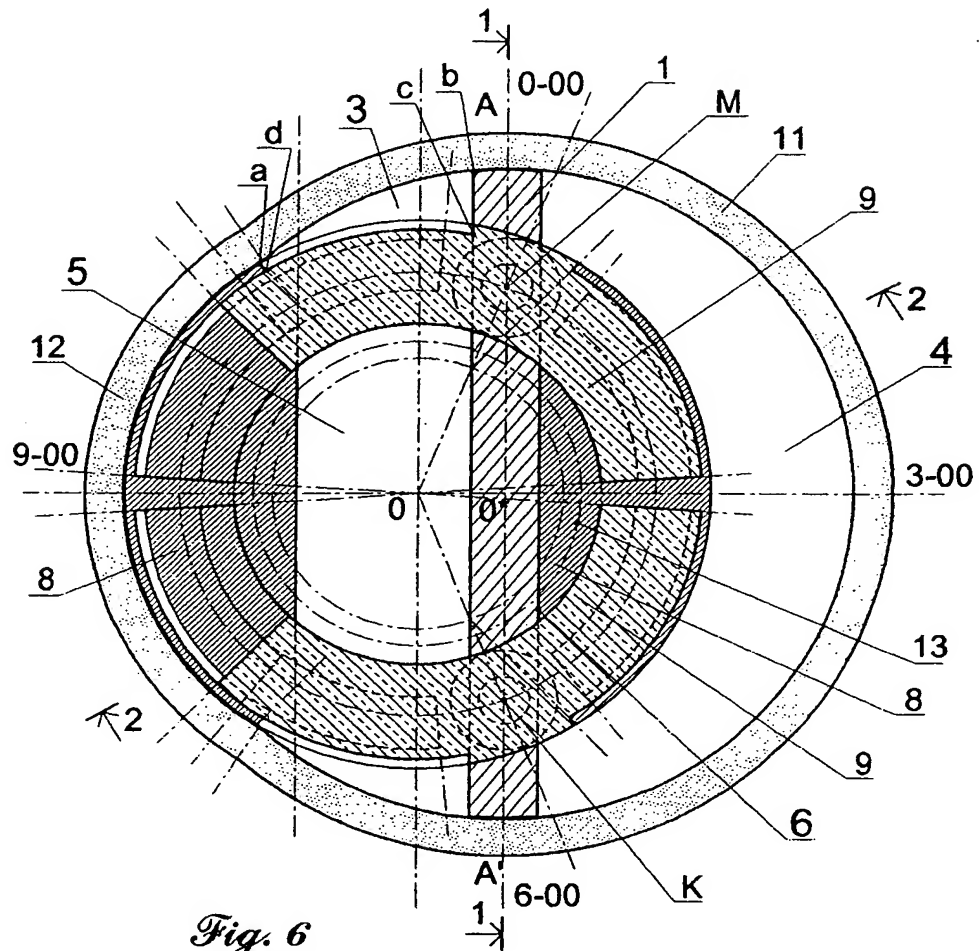


Fig. 6

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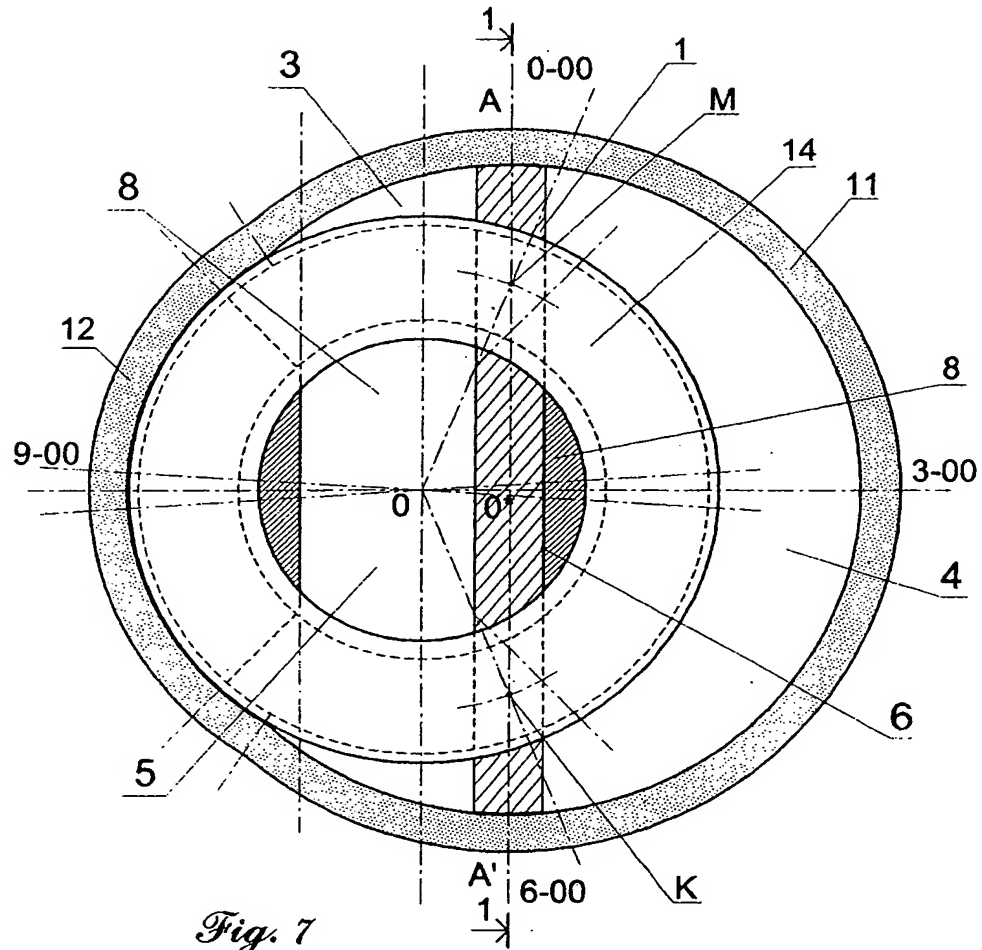


Fig. 7

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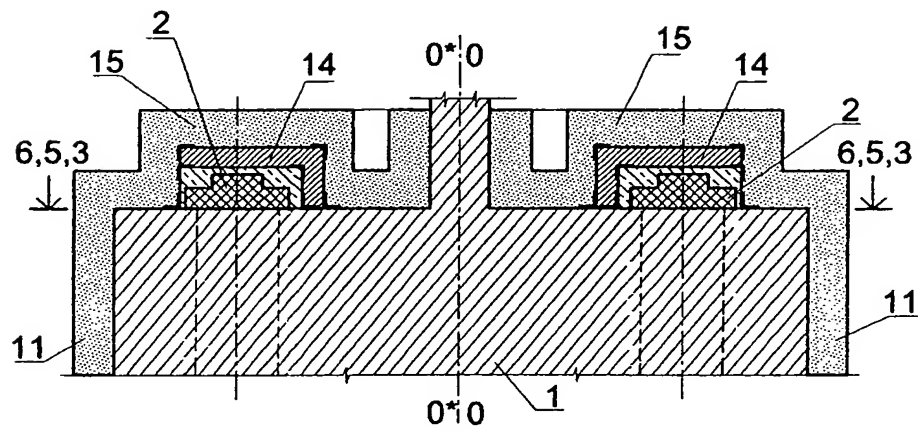


Fig. 8

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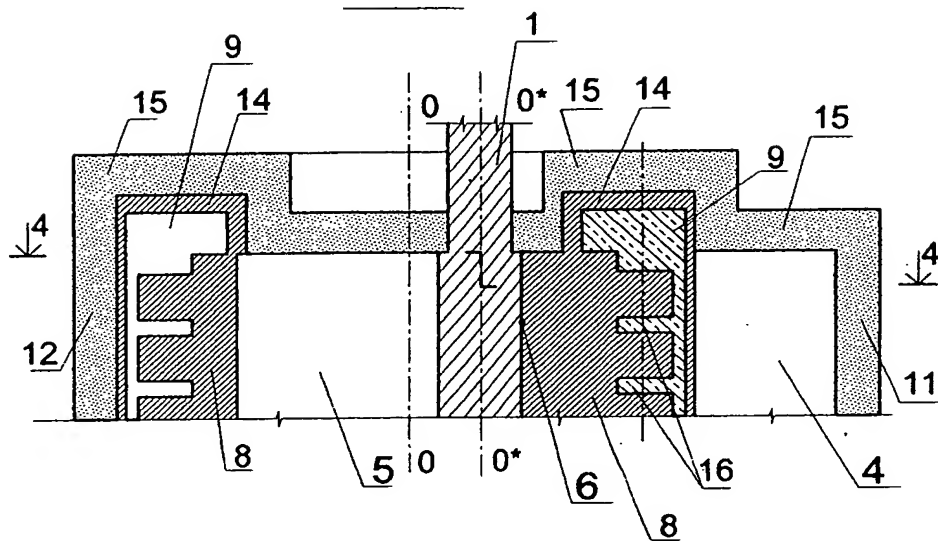


Fig. 9

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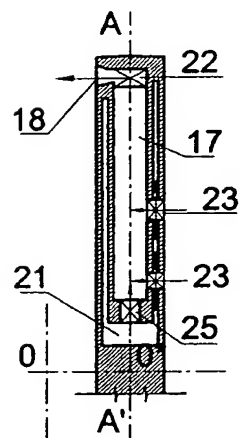


Fig. 10

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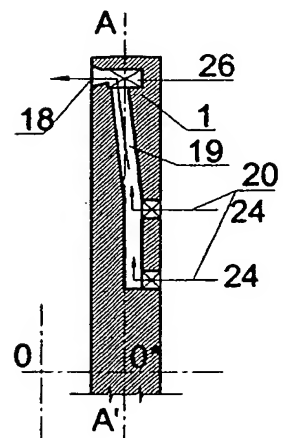


Fig. 11

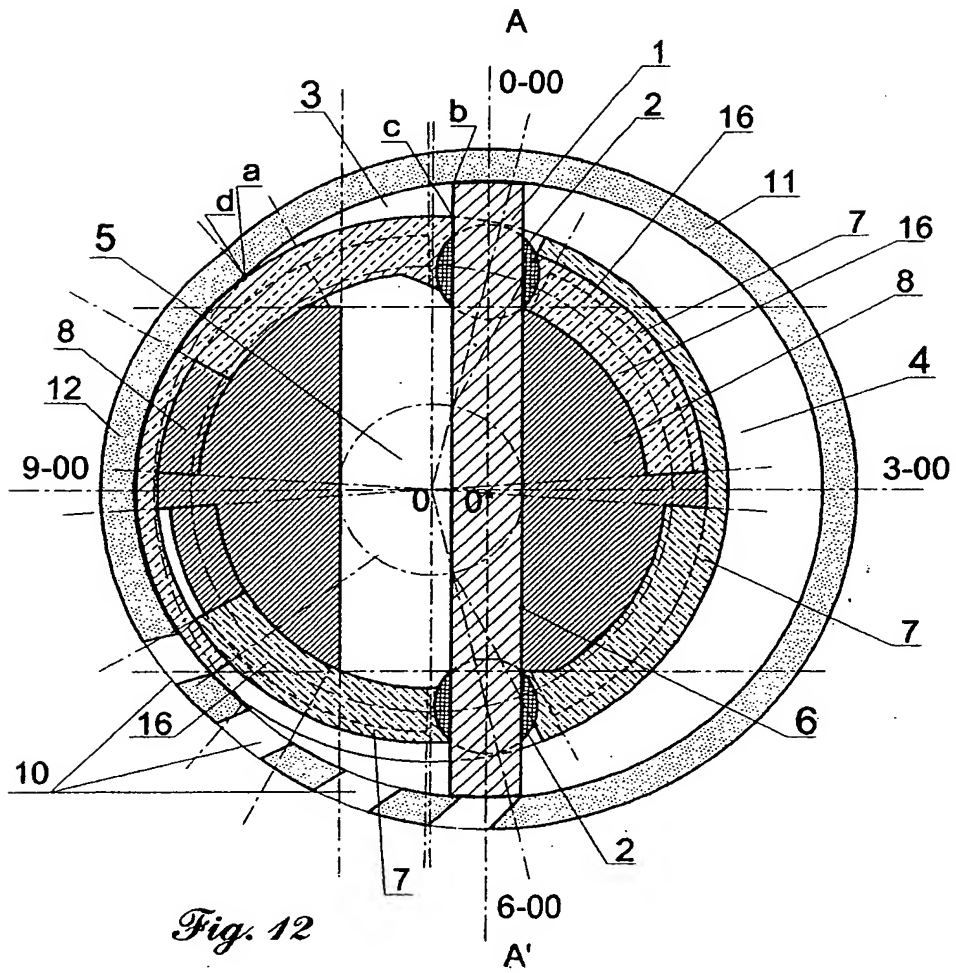


Fig. 12

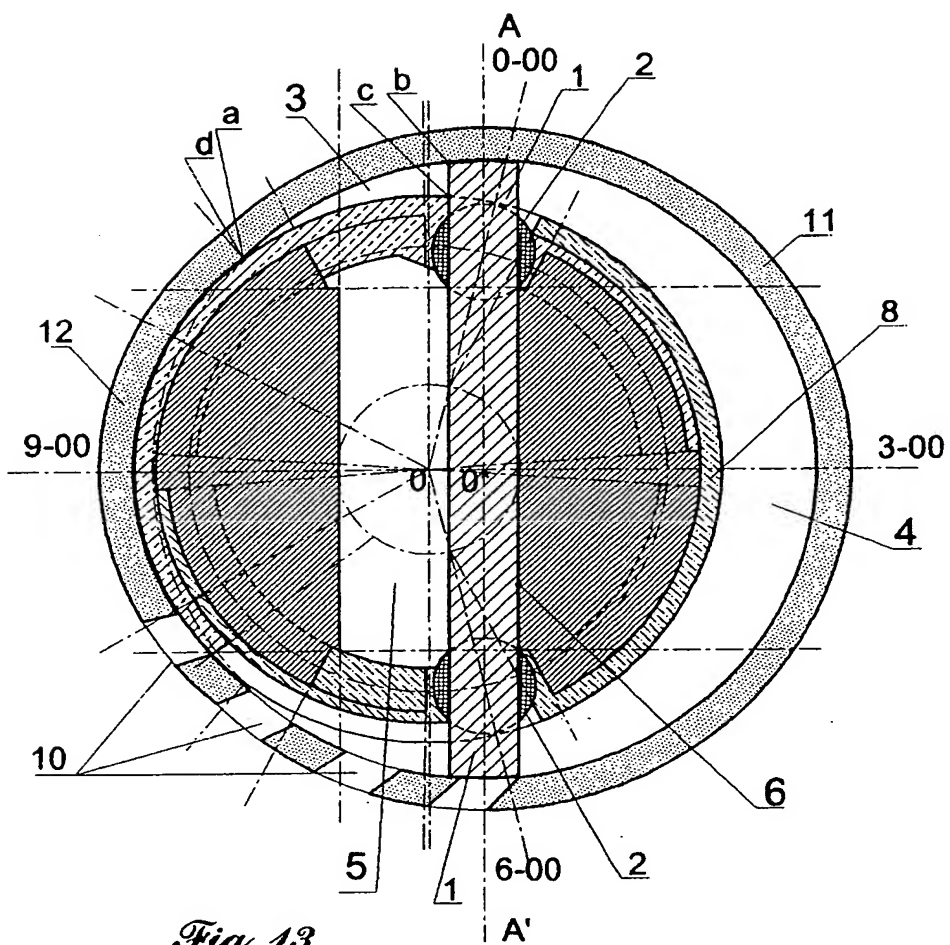


Fig. 13

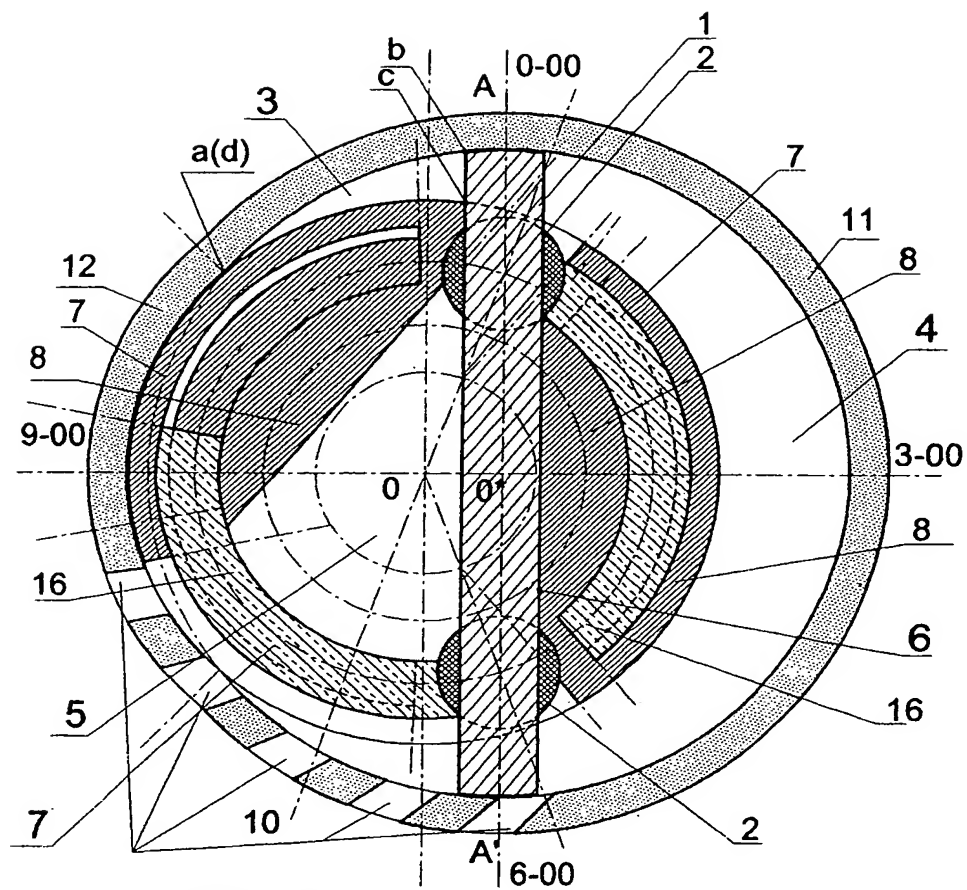


Fig. 14

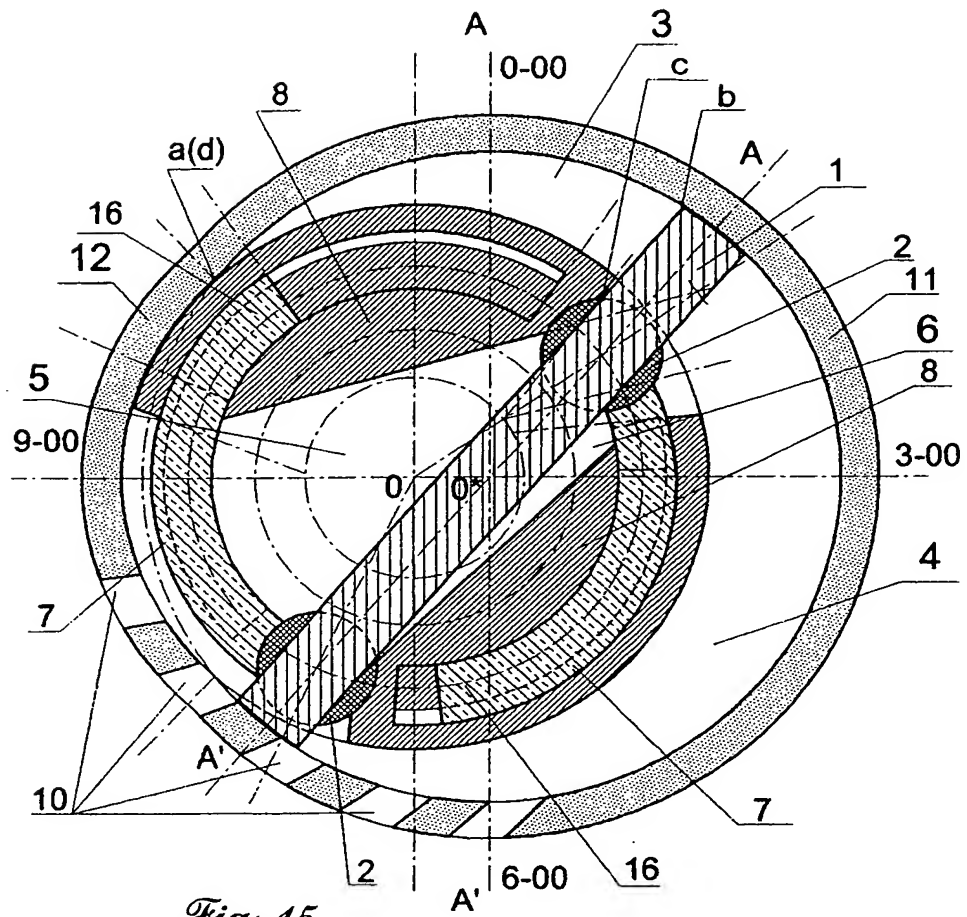


Fig. 15

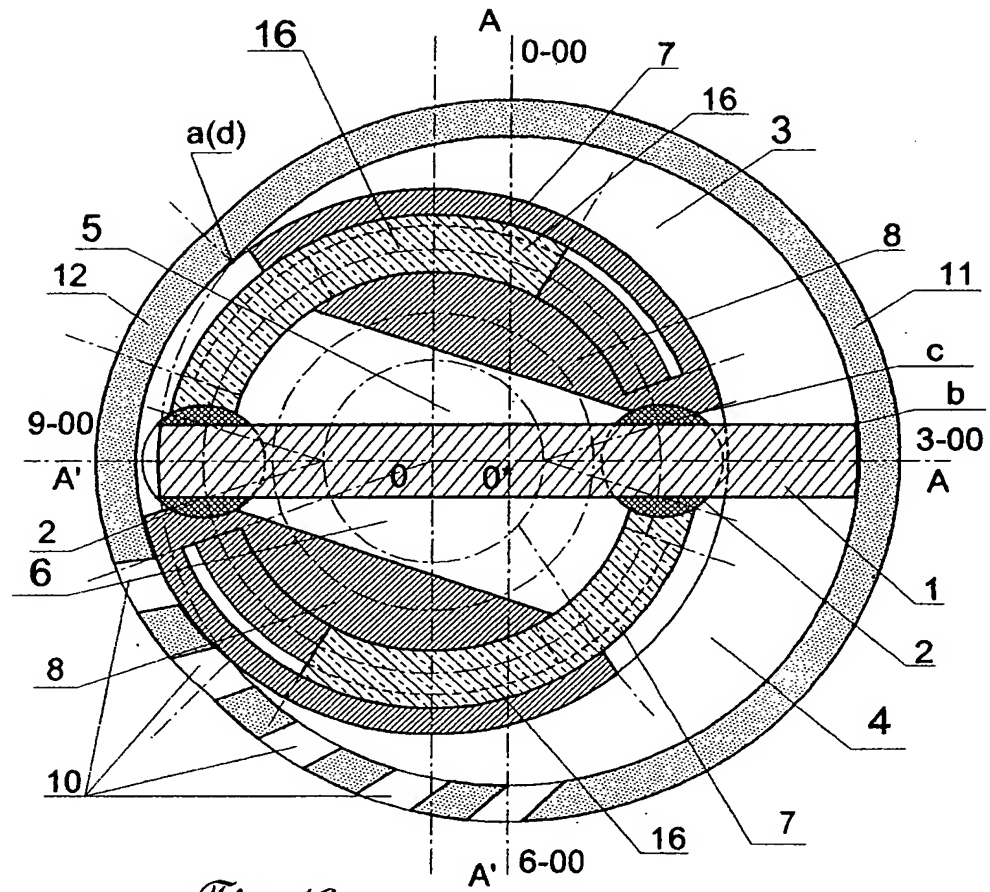


Fig. 16

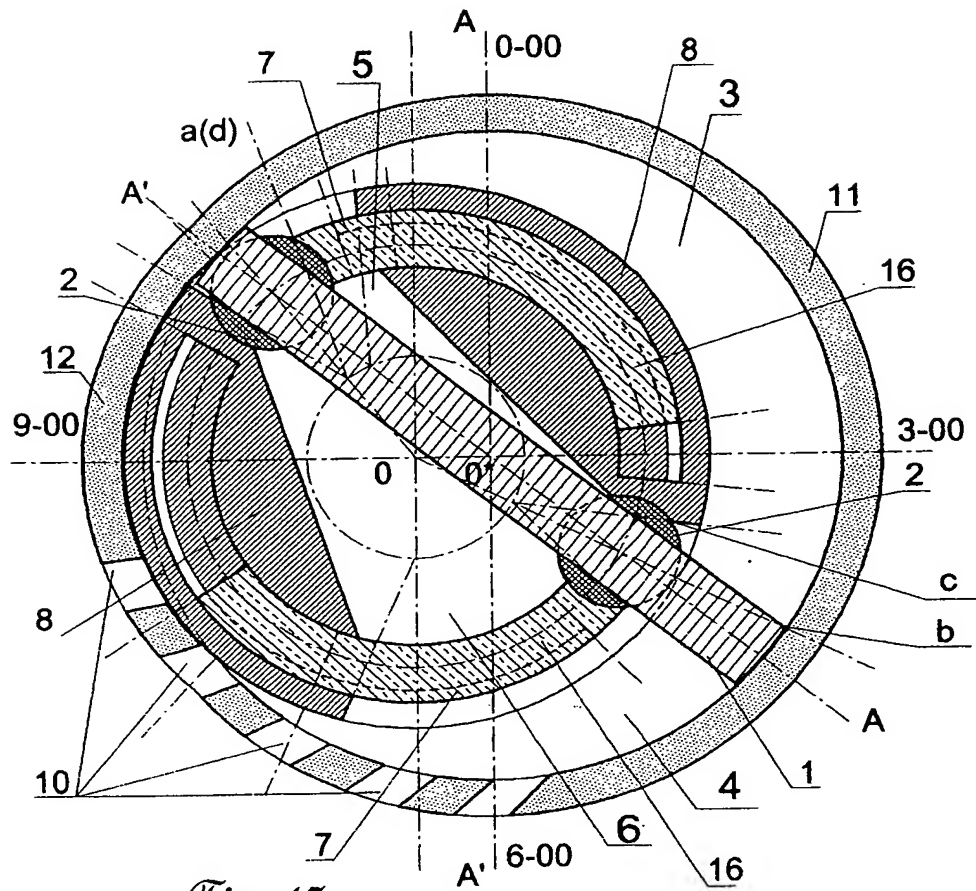


Fig. 17

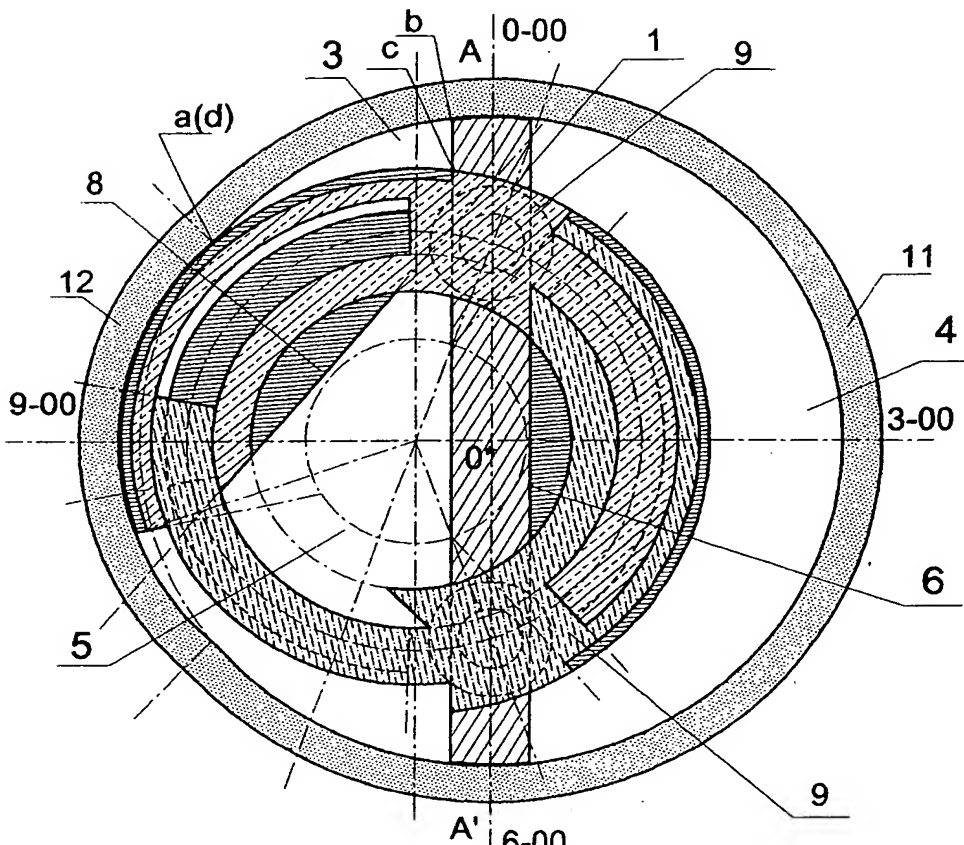
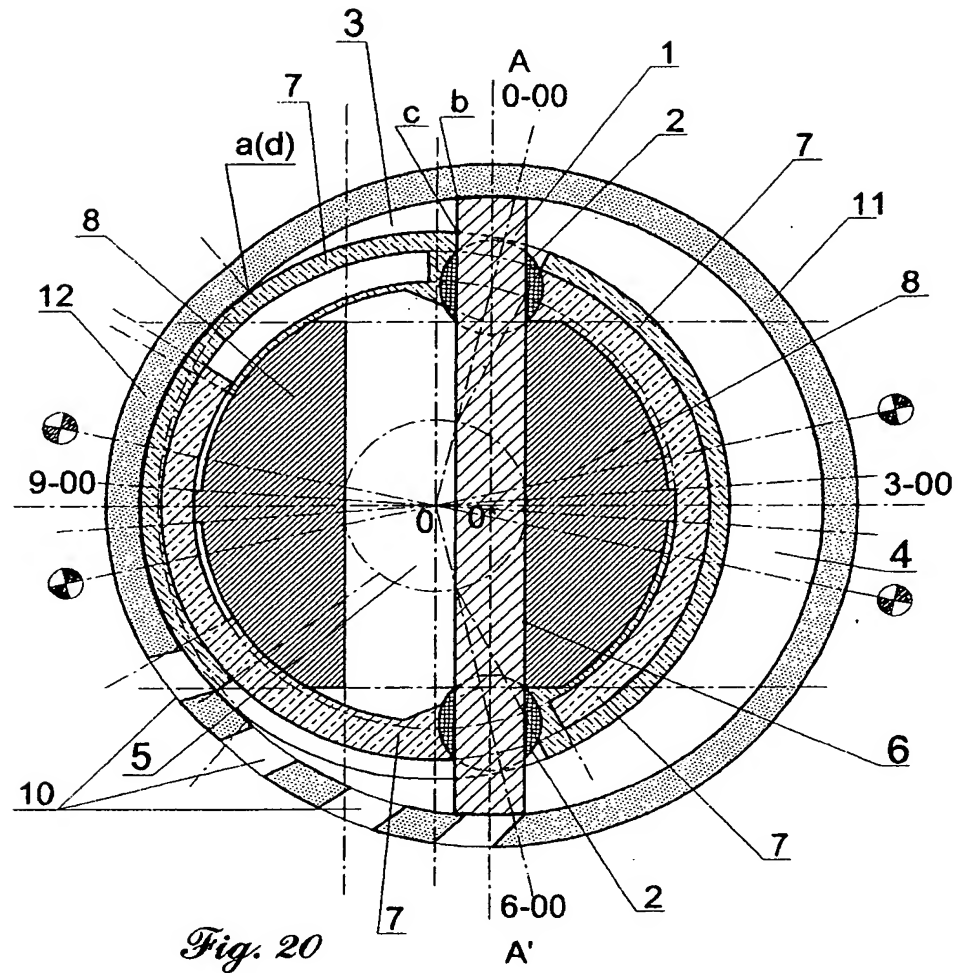


Fig. 18



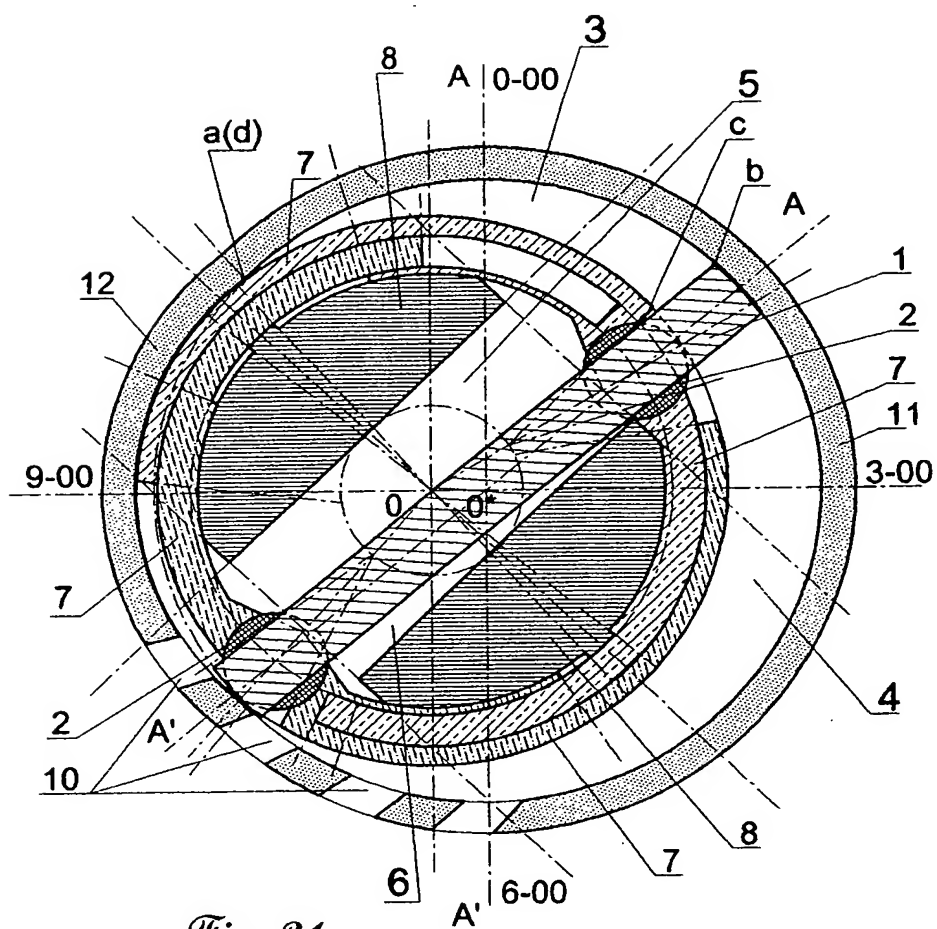


Fig. 21

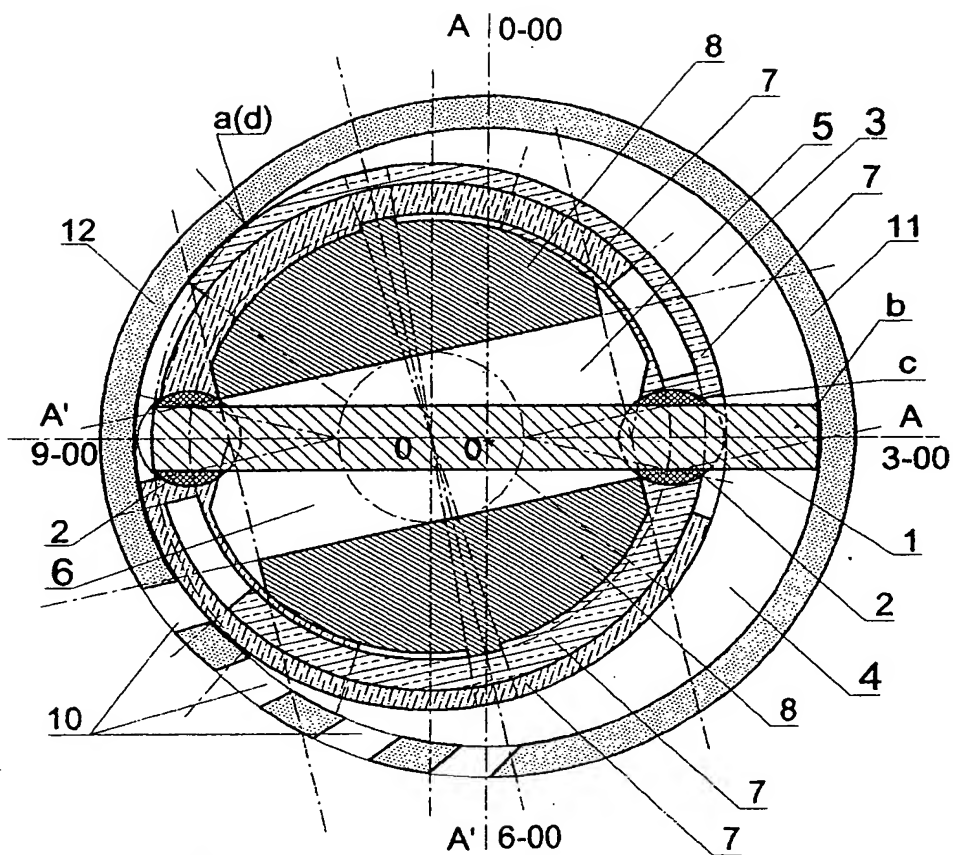


Fig. 22

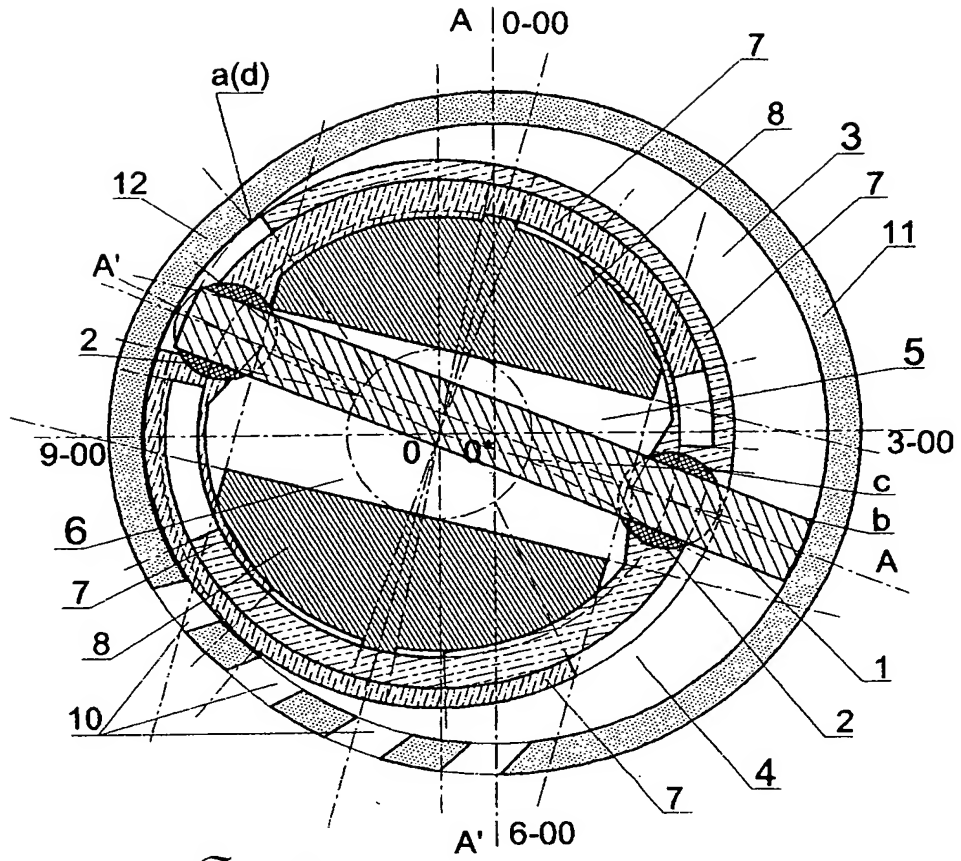


Fig. 23

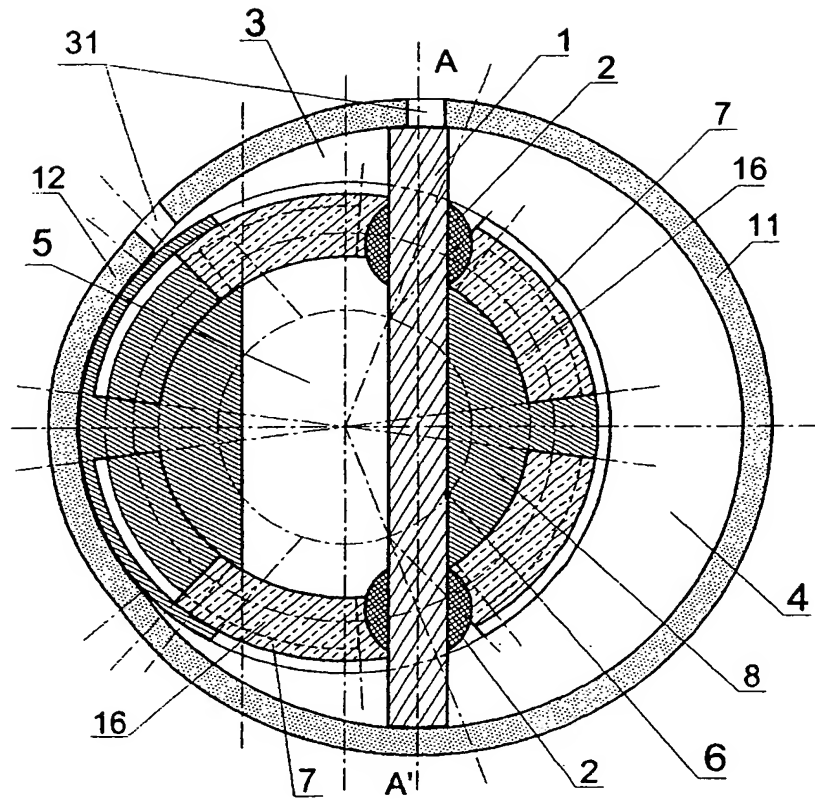


Fig. 25

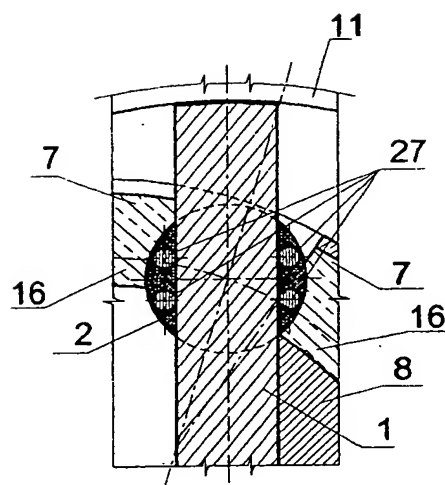


Fig. 26

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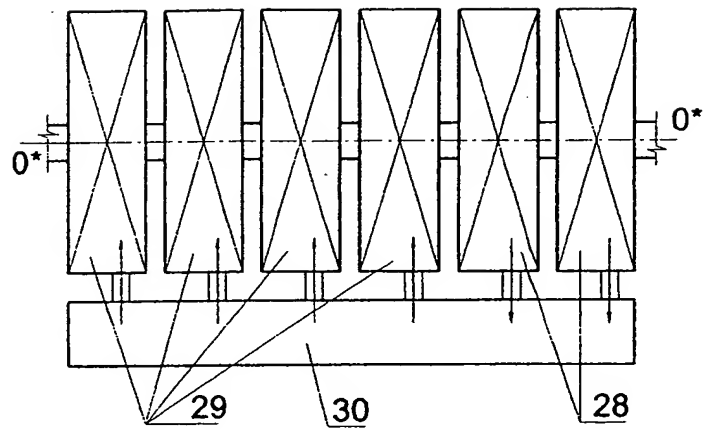


Fig. 27

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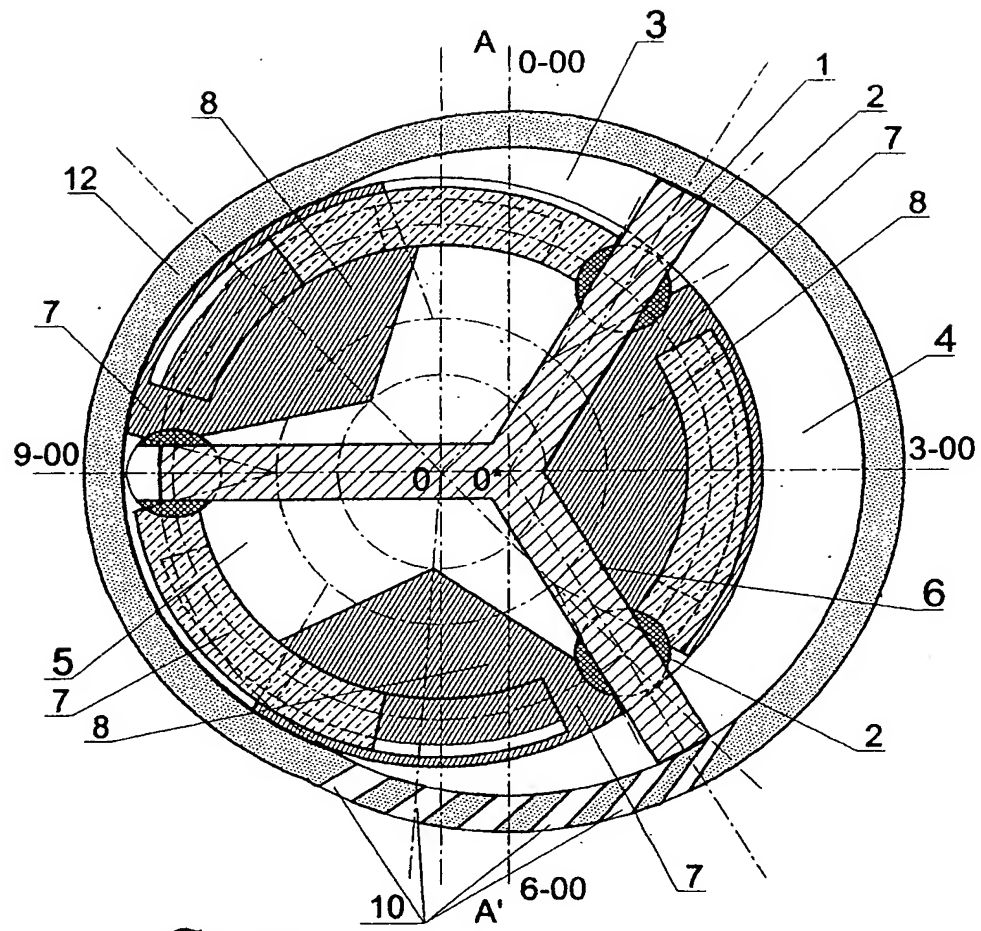


Fig. 28

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